

2008

# Sustainability Education Project

## WIG #2:

95% of Division Staff demonstrate an understanding of the Principles of Sustainability by June 30, 2008

Sustainability Education Team  
Department of Conservation  
6/30/2008



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## Executive Summary

*The Department of Conservation, Division of Recycling strategic plan for 2008 through 2012 identified the principles of sustainability, eco-effectiveness, and environmental renewal as being integral to the success and vision of the recycling program. As such, the Division initiated the Sustainability Education Project to achieve its “Wildly Important Goal” (WIG) that 95% of Division staff demonstrates an understanding of the principles of sustainability by June 30, 2008. To meet its goal, the Division formed the Sustainability Education Team. The team’s primary goal was to develop and implement an action plan for achieving the stated sustainability goal.*

*The team began work on the project in October of 2007 and met weekly to establish a cadence of accountability. The team developed a project charter and detailed work plan that identified the various tasks to be performed. The team designed an internal Web site to serve as a repository of information related to the principles of sustainability, including links to Web sites for additional information, frequently asked questions, and the definitions that served as the basis for staff’s understanding. In addition to the Web site, the team developed a sustainability survey to test staff’s baseline knowledge on the subject and to assist the team in developing the content for the sustainability workshop. The baseline survey showed that 75% of Division staff have a limited understanding of the principles. Additional measurement tools included reading the book “Cradle to Cradle” and distributing emails to staff that further explained the principles and how they applied to staff’s professional and personal life.*

*The sustainability workshop was designed to increase staff’s awareness of the principles and how they applied to staff’s areas of responsibility. Also, the workshop needed to be fun and interactive. The workshop was the team’s best opportunity to provide staff the information necessary to demonstrate an understanding of the principles. In addition to presenting the sustainability information, the workshops provided an opportunity for staff to brainstorm ideas to implement the principles of sustainability into their professional life. A summarized list of the ideas generated by staff is included in this report.*

*At the conclusion of the workshop, staff were given an assignment to demonstrate their understanding. To prove they understood the principles, staff were presented with four case studies that demonstrated the principles*

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***in action. Staff were instructed to read one of the studies and answer four questions about the study. The answers were submitted to the branch representative and graded on a pass/fail basis. Once staff passed the assignment, they received their sustainability certificate. If staff were unable to pass on the first try, they were given additional assistance, as required.***

***The final results proved that staff understand the principles of sustainability. As of June 30, 2008, 99% of Division staff have demonstrated an understanding of the principles and earned their sustainability certificate. In addition, over 95% of Division staff have read the book "Cradle to Cradle."***

***The project team was very encouraged by the reception received by the workshop and the ideas that were generated. It is important to continue the sustainability work and capitalize on staff's enthusiasm. The ideas presented should be considered and implemented by a future sustainability education team.***

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## ***Project Charter***

<b>Project Title:</b>	<b>Sustainability Education Project</b>
<b>Charter Date:</b>	October 22, 2007
<b>Sponsors:</b>	Stephen Bantillo – <i>Assistant Director, Division of Recycling (DOR)</i> John Panenka – <i>Acting Deputy Chief, Division of Recycling (DOR)</i>
<b>Working Groups:</b>	<p><b>Executive Steering Committee:</b></p> <ul style="list-style-type: none"><li>• Stephen Bantillo – <i>Assistant Director, Division of Recycling (DOR)</i></li><li>• Dana Stone – <i>Deputy Chief, Division of Recycling (DOR)</i></li></ul> <p><b>Executive Project Management:</b></p> <ul style="list-style-type: none"><li>• Stuart Hall – <i>Certification Services Branch – RSIII (Supervisory)</i></li></ul> <p><b>Sustainability Education Project Team Members:</b></p> <ul style="list-style-type: none"><li>• Hieu Le – <i>Market Research Branch – RSIII (Supervisory)</i></li><li>• Arlene Miller – <i>Division of Recycling Administration – RSII</i></li><li>• Tina Muncie – <i>Statewide Technical Assistance and Resources Branch – RSII</i></li><li>• Michelle Carlson – <i>Industry Services Branch – Research Analyst II</i></li><li>• Jessica Wingert – <i>Investigations Branch – Associate Management Auditor</i></li><li>• Kent Harris – <i>Policy and Analysis Branch – Research Manager II</i></li><li>• Audrey Traina – <i>Audits Branch – Senior Management Auditor</i></li></ul>
<b>Background:</b>	<p>The State of California has promulgated a proactive environmental policy that integrates its current environmental agenda with the growth and success of California business interests in the state. The Department of Conservation, Division of Recycling (DOR) administers the California Beverage Container Recycling and Litter Reduction Act (Act). The primary goal of the Act is to achieve an 80 percent recycling rate for each beverage container type included in the program.</p> <p>In an effort to support the environmental initiatives identified at the state level, training on various <b><i>Principles of Sustainability</i></b> has been identified as a priority by the Division of Recycling. This training is designed to enhance the overall environmental knowledge of staff and facilitate an</p>

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	<p>understanding of <b><i>Principles of Sustainability</i></b> throughout the Division of Recycling, while complimenting the Strategic Plan.</p> <p>According to the World Business Council on Sustainable Development:</p> <p><i>“Sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality and social equity. Companies aiming for sustainability need to perform not against a single financial bottom line, but against the triple bottom line.”</i></p>
<b>Current Situation:</b>	<p>Cradle-to-grave product design currently dominates present manufacturing processes. It is estimated that one-half to three-quarters of annual resource inputs to industrial economies are returned to the environment as wastes within one year. <sup>1</sup></p> <p>Ongoing attempts to limit manufacturing waste, dilute pollution, retrieve products at the end of their useful life, re-utilize post-consumer waste products, and slow the loss of valuable natural resources is a continual problem for local and state governments.</p> <p>Conventional design and the lack of sustainable protocols are responsible for these negative impacts. This cradle-to-grave model not only destines products for a one-way trip to the landfill; it creates “built-in obsolescence.”</p> <p>To counter the negative impacts of these manufacturing processes, government solutions are generally legislative in nature. One of the most effective roles of government is to support social and political justice and to act as a guardian of its citizens. The regulatory infrastructure in and of itself, is not enough to effectively protect the environment. To complement existent legislation, efforts have been initiated to target the reduction of dangerous chemicals by eliminating toxic emissions altogether, at the product design stage – leading supporters to coin the phrase “Design for the Environment (DFE).”</p> <p>Conventional manufacturing currently lacks sustainable protocols, which leaves us with an industrial design system that is intrinsically flawed. Industrial design was developed at a time when few understood the dynamic relationship between the economy and ecology, or the principles</p>

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<sup>1</sup> World Resources Institute (detail to follow)

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	<p>of the earth's natural renewal systems.</p> <p>Efforts to increase understanding of these principles are one of the primary goals targeted by the Sustainability Education Project. This means understanding the need to replace industry's cradle-to-grave models (established with the advent of the industrial revolution) with systems modeled on nature's cradle-to-cradle cycles, in which the waste of one organism becomes the food source (feedstock) of another. These new systems facilitate the development of a new design paradigm built on eco-effectiveness and resource conservation.</p> <p>Sustainable design leads to a new industrial system that restores nature, saves energy, eliminates the concept of waste, reduces health costs and creates enduring wealth and social value. The rationale is simple - using technology in concert with the natural processes of nature is much more economical than using technology to overpower nature.</p>
<b>Mission Statement:</b>	<p>The <b><i>Sustainability Education Project</i></b> is intended to enrich staff's knowledge and increase their understanding of sustainability as it relates to Division goals and objectives. Utilizing baseline data, the sustainability education team will research, develop and initiate sustainability trainings aimed at:</p> <ul style="list-style-type: none"> <li>• Identifying the meaning of sustainability (<i>beyond "Cradle to Cradle"</i>).</li> <li>• Developing a model of sustainability that will allow for its practical application within the Division of Recycling, both now and into the future.</li> <li>• Introduce content and testing processes to measure staff understanding of the principles of sustainability.</li> </ul>
<b>Project Goals:</b>	<p>The primary goal of the <b><i>Sustainability Education Project</i></b> is to enhance and demonstrate understanding regarding the basic principles of Sustainability and Division objectives, as it relates to current and future Division projects.</p> <ul style="list-style-type: none"> <li>• Demonstrate that 95% of the Division of Recycling staff understands the Principles of Sustainability by 6/30/08.</li> <li>• Introduce project metrics and performance-based success indicators that will allow the Division to measure staff understanding.</li> <li>• Develop a training toolkit to include curriculum-related tools and materials (syllabus, worksheets, testing materials, PowerPoint training materials, etc.) that will facilitate educational goals associated with the Sustainability Education Project.</li> <li>• Identify and communicate the value of sustainability knowledge for the individual DOR employee.</li> <li>• Produce and post a Sustainability Scoreboard to track and monitor</li> </ul>



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	<ul style="list-style-type: none"> <li>○ Curriculum</li> <li>○ Glossary</li> <li>○ Frequently Asked Questions</li> <li>○ Training Material</li> <li>○ Testing Structure</li> <li>○ PowerPoint Presentations</li> <li>○ Video Presentations</li> <li>○ Sustainability Completion Certificate</li> <li>● Final Report</li> </ul>
<b>Governance:</b>	<p>The Executive Steering Committee shall serve as the primary governing body that will review and approve all Sustainability project actions, recommendations and implementation plans presented by the project team, project manager and other participants.</p>
<b>Team Roles &amp; Responsibilities:</b>	<p><b>Executive Steering Committee</b></p> <ul style="list-style-type: none"> <li>● Define strategic direction of Sustainability Education Project</li> <li>● Maintain on-going commitment to the project</li> <li>● Ensure project is aligned with Department of Conservation Strategic Plan</li> <li>● Maintain communication with DOC Director</li> <li>● Responsible for issue resolution</li> <li>● Establish project priorities</li> <li>● Provide resource and funding allocations</li> <li>● Serve as ultimate project decisions-makers</li> </ul> <p><b>Project Manager</b></p> <ul style="list-style-type: none"> <li>● Develop Project Specifics (budget, implementation schedule, project plan, and milestones)</li> <li>● Identify strategic direction and seek approval</li> <li>● Facilitate communication between all participants</li> <li>● Facilitate execution of the Project Plan</li> <li>● Facilitate development and execution of Training Plan</li> <li>● Provide oversight of timelines and deliverables</li> <li>● Responsible for staying on time and on budget</li> <li>● Identify available resources</li> <li>● Make recommendations to Executive Steering Committee</li> <li>● Provide oversight of Final Report</li> </ul> <p><b>Sustainability Education Project Team Members</b></p> <ul style="list-style-type: none"> <li>● Develop sustainability workshop content and testing strategies</li> <li>● Develop baseline measurement methodology</li> <li>● Identify success indicators for the Training Plan</li> <li>● Develop internal Communications Plan</li> <li>● Develop sustainability training toolkit</li> <li>● Implement sustainability training sessions</li> <li>● Evaluate success of project</li> <li>● Develop “New Employee” Sustainability Training Plan</li> </ul>

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	• Finalize Report	
<b>Milestones:</b>	<b>Defined Milestones</b>	<b>Due Date</b>
	Project Charter approval	November 2007
	Project Plan approval	December 2007
	Develop task list and "Scoreboards"	December 2007
	Research and select workshop content	January 2008
	Survey ready and distributed to staff	January 2008
	Analyze survey results	February 2008
	Calendar workshop sessions	February 2008
	Draft content of presentations	February 2008
	Finalize content for presentation	March 2008
	Train the Trainer	March 2008
	Complete training sessions	April 2008
	Measure staff understanding	April 2008
	"Sustainability Certificate"	May 2008
	Pass/Fail determination	May 2008
	Draft WIG report	June 2008
	Final WIG Report submitted	June 2008
	Acceptance of Final Report	June 2008

## ***Communication Plan***

This communication plan is designed to provide staff with the necessary information to promote understanding of the principles of sustainability, environmental renewal, and eco-effectiveness. It is the goal of the Sustainability Education Team (SET) to have open communication and provide Division staff with the necessary information to fully understand the principles of sustainability, environmental renewal, and eco-effectiveness. It is important to note that the SET members are not experts on these subjects and do not profess to have all the answers and/or state that the information we present will be the only information available. The SET will make every conceivable effort to present information and ideas that are supported and recommended by reputable sources and based on empirical evidence. The SET understands that many suggestions and ideas to become more environmentally conscience may reduce the impacts on one resource while increasing the impacts on another. It will be our goal to identify all impacts and mitigate them to achieve a less impactful suggestion.

The project team will use the following definition as the basis of our training and understanding:

- **Principles of Sustainability:**  
*Meeting the resource needs of the present without compromising the resource needs of the future by ensuring:*
  - *Minimal consumption of natural resources*
  - *Reuse or recycling of all waste*
  - *Total reliance on clean, renewable energy technologies*
  - *No polluting or emitting of waste beyond what ecosystems can break down and harmlessly recycle naturally*
  - *Quality of life for all ecosystems*
  - *Consideration of the principles of economic prosperity*
- **Eco-Effectiveness:**  
*A strategy for designing recycling systems that are safe, profitable, and regenerative, producing economic, ecological, and social value*
- **Environmental Renewal:**  
*Preserving, replenishing, and enhancing the natural resources of the State.*

The information will focus on how staff can improve the sustainability of their workstation/office/duties and those of their participants. The intent is to allow staff to understand how to achieve a sustainable job and lifestyle and then apply those principles and ideas to their participants. In addition, the material will be easy to understand, visually enticing, and meant to inspire staff to think creatively for ideas and solutions to reduce their impact on the environment.

The primary repository of information will be a dedicated internal HTML site set up and housed in a network folder. The Web site will provide the following information:

- Team members
- Project Mission Statement
- Copy of the current Strategic Plan
- Training materials, staff communications, and instruction for earning certificate
- Links to Web sites for additional information
- Frequently asked questions

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- Definitions and glossary of terms

The following is the communication schedule:

<b>Communication</b>	<b>Audience</b>	<b>Medium</b>	<b>Main Message</b>	<b>Expected Result</b>	<b>Date of Dissemination</b>
Introduction Memo	DOR Staff	Email	Introduce staff to the team and establish familiarity with the topics	Staff recognize the team members and know where to find information	January 17, 2008
Baseline Survey	DOR Staff	Email/Web site	Measure the level of understanding	Identify baseline percentage and develop workshop to zero based strength	February 25, 2008
Definitions- Principles of Sustainability, environmental renewal and eco-effectiveness	DOR Staff	Email	Introduce staff to the terms and the accepted definitions	Staff begin their understanding of the topic and begin to think about how the topics apply to their job and participants	March 6, 2008
Sustainability Web site— HTML Site	DOR Staff	Intranet	Repository for all correspondence, information, etc. made available to staff	Easy access for staff to find links, glossary of terms, and other pertinent information	March 10, 2008
Top Ten Sustainability Ideas, case studies, Web sites, etc.	DOR Staff	Email	Information	Information	March 17, 2008
Ideas to improve sustainability at work and home; Carbon	DOR Staff	Email	Simple ideas for staff	Staff begin to recognize principles and how to apply to	March 24, 2008

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Footprint				work	
Ideas to conserve natural resources	DOR Staff	Email	Simple ideas for staff	Staff begin to recognize principles and how they apply	March 31, 2008
Sustainability "Thought of the Month"	DOR Staff	Email	Simple ideas for staff	Staff begin to recognize principles and how to apply to work	March, April, May, June
MRB Workshop	MRB Staff	Facilitated Discussion	Definitions and practical ideas	Staff work together to identify how, what, where, when, and why	April 7, 2008
Audits Branch Workshop	Audits Staff	Facilitated Discussion	Definitions and practical ideas	Staff work together to identify how, what, where, when, and why	April 8, 2008
CSB, PANDA, DORA Workshop	CSB Staff	Facilitated Discussion	Definitions and practical ideas	Staff work together to identify how, what, where, when, and why	April 10, 2008
ISB Workshop	ISB Staff	Facilitated discussion	Definitions and practical ideas	Staff work together to identify how, what, where, why, when	April 14, 2008
STAR Workshop	STAR Staff	Facilitated discussion	Definitions and practical ideas	Staff work together to identify how, what, where, why, when	April 15, 2008
Investigations Workshop	Inv. Staff	Facilitated discussion	Definitions and practical ideas	Staff work together to identify how, what, where,	April 16, 2008

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				why, when	
Sustainability Certificate Assignment	DOR Staff	Issue paper	Staff's opportunity to demonstrate an understanding of the principles of sustainability	Practical ideas for sustainability	May 16, 2008
Final Measurement	SET	Internal Team	Project team reviews assignment for understanding	To determine the percent of staff that understands the principles of sustainability	June 1, 2008
Sustainability Report	Executive Staff	Report	Practical solutions for how staff will increase sustainability	Demonstrate to executive staff that DOR understands the principles of sustainability and how the principles will be applied in the office and with our participants	June 30, 2008

The planned Branch-specific workshops will be facilitated discussions in which SET will present definitions of the principles of sustainability, eco-effectiveness, and environmental renewal. Staff will view two case studies that show the principles in action and will work together to identify the principles, actions, and benefits/challenges of implementing the projects. Attendees will then identify practical applications of the principles to their professional life. In addition, table groups will identify ideas to improve the sustainable actions of their participants with which they have the most contact. The ideas will be summarized and presented to management in the final report.

In order for the Division to meet the goals as specified in WIG #2, staff must demonstrate an understanding of the principles. This will be accomplished by completing a sustainability assignment, which mirrors what was discussed during the workshops. Staff will be sent four case studies, of which they must read one and answer four questions relating to the case study. The four questions are:

1. What are the sustainability goals of the company?
2. What sustainability principles are they using?
3. What actions are they taking to accomplish their goals?
4. What are the anticipated benefits and challenges of reaching their goals?

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The assignments will be emailed to the branch representative for review. Upon completion, staff will be given a certificate indicating that they have demonstrated an understanding of the principles of understanding. If the staff does not pass, he/she will be given another opportunity to complete the assignment, with additional help, if necessary.



### ***Baseline Survey-Results***

Question 1	Number of Respondents	Percent correct
Select the best definition for environmental renewal	195	
a) Preserving, replenishing, and enhancing the natural resources of the state		88%
b) Conserving natural resources		3%
c) Consuming resources faster than nature can replenish them		1%
d) All of the above		8%

Question 2	Number of Respondents	Percent correct
Select the best definition for eco-effectiveness	195	
a) Produces some products that enrich the environment		9%
b) Designs systems that are less bad		7%
c) Designs systems that produce economic, ecological, and social value		83%
d) Designs systems that build prosperous economic industries		1%

Question 3	Number of Respondents	Percent correct
Quality of life for all ecosystems means:	195	
a) Not emitting waste beyond what nature can breakdown and recycle		16%
b) Reliance on clean renewable energy		1%
c) Minimal consumption of natural resources		1%
d) All of the above		82%

Question 4	Number of Respondents	Percent correct
Which of the following is not considered a major human activity for pollution production?	195	
a) Industry		0%

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b) Energy		17%
c) Transportation		1%
d) Recreation		59%
e) Agriculture		23%

Question 5	Number of Respondents	Percent correct
Which of the following are not renewable energy sources?	195	
a) Algae		6%
b) Hydrogen		1%
c) Nuclear		64%
d) Ocean		4%
e) All of the above		24%

Question 6	Number of Respondents	Percent correct
The growing global population has increased the pressure on land resources. Productive agricultural land is diminishing due to:	195	
a) Soil erosion and degradation caused by overgrazing		3%
b) Deforestation		1%
c) Industrial activities		6%
d) All of the above		90%

Question 7	Number of Respondents	Percent correct
Economic prosperity is the driving force for change and must be considered above all other principles when designing sustainable systems.	195	
a) True		18%
b) False		82%

Question 8	Number of Respondents	Percent correct
Producer responsibility is:	195	
a) An environmental protection strategy		3%
b) Making manufacturers responsible for the entire life cycle of the products and packaging they produce		27%
c) Shifting the economic burden of managing products that have reached the end of their useful life from local		6%

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government and taxpayer to the product producer and consumer		
d) All of the above		64%

Question 9	Number of respondents	Percent correct
A sustainable container is:	195	
a) Thrown away		0%
b) Regenerative		76%
c) Biodegradable		12%
d) Easily down cycled		12%

Question 10	Number of Respondents	Percent correct
An example of a sustainable container is:	195	
a) Glass		58%
b) Aluminum		30%
c) PETE		10%
d) HDPE		2%

Question 11	Number of Respondents	Percent correct
Cradle to Cradle means:	195	
a) Designing single-use products		0%
b) Designing products that can be infinitely recycled		80%
c) Reduce, Reuse, Recycle		7%
d) All of the above		13%

Based on the responses, 75% of staff have a limited understanding of the principles of sustainability, eco-effectiveness, and environmental renewal. This information will be used to develop the workshop curriculum to maximize the time spent and the areas covered.

# ***Sustainability Certificate Case Study Accepted Responses***

### **Fetzer Case Study (Appendix A)**

#### **1. What are the sustainability goals of the Company?**

Fetzer wants to make their wines in a natural and responsible way so that they can continue to make them for generations to come. They do this by using sustainability as the integration of the environmental responsibility, social equity, and economic viability in all areas of vineyard and winery operations.

#### **2. What Sustainability Principles are they using?**

All six principles of sustainability are being addressed. Although they are not quite there on some of them, they are working toward a completely sustainable environment for their business.

#### **3. What Actions are they taking to accomplish their goals?**

- Green building practices
- Addressing global warming
- Growing cover crops that protect against erosion as well as attract animals and insects that protect against pests
- Protecting and creating habitats for animals
- Recycling waste water and not using chlorine for water treatment
- Growing grapes organically
- Composting grape skins
- Using 100% renewable energy such as solar, wind, and geothermal
- Increase energy efficiency
- Recycling programs – reduced solid waste by 95% since 1990
- Recycling all that can be recycled
- Using recycled products
- Using less fuel by prioritizing delivery and pickups
- Using biodiesel
- Offering incentives to employees who use sustainability practices

#### **4. What are the anticipated Benefits/Challenges in reaching goals?**

##### **Benefits**

- Create a better grape for better wine
- Become better stewards of the land
- Valuable member of the community

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## Challenges

- Need buy-in from the community – actions do not just affect Fetzer, but the community and the world
- Cost associated with change to sustainable practices

## Nike Case Study (Appendix B)

### **1      *What are the Sustainability goals of the company?***

- Reduce waste generated across their entire supply chain.
- Reduce CO2 emissions.
- Use chemistry and design innovation to eliminate toxins and waste.
- Design the company into an ultimate, inspirational goal of creating closed loop products and business models (products that can be reused or recycled).

### **2      *What Sustainability Principles are they using?***

- Minimal consumption of natural resources.
  1. Expanding use of environmentally preferred materials, such as rubber that contains 96% fewer toxins than the original formulations.
  2. Increasing the amount of organic cotton in all cotton-containing apparel.
  3. Removed PVC from product lines.
  4. Optimizing logistics to minimize environmental impact through reducing waste and energy use.
- Reuse or recycling of all waste.
  1. Using scrap footwear material in Nike Grind to resurface playing fields.
  2. Using recycled polyester in many products in the All Conditions Gear.
  3. Using wastewater treatment plants at every footwear factory.
  4. Creating new markets for what would otherwise be waste.
  5. Establishing factories where the original raw material vendor receives waste products to be used in making new shoes.
- No polluting or emitting of wastes beyond what ecosystems can breakdown and harmlessly recycle naturally.
  1. Eliminated F-gasses across all Nike products in 2006.
  2. The US supply chain team aspires to achieve zero waste through reuse of shipping cartons and finding opportunities to optimize fuel consumption and alternative fuels.
  3. Reduced CO2 emissions from business travel and Nike-owned and operated facilities.
  4. Developed a restricted substance list.
  5. Continue to reduce the release of Volatile Organic Compounds in the manufacturing process.
  6. Using only climate change-neutral nitrogen in all Nike Air products.
- Total reliance on clean, renewable energy technologies.
  1. Has steadily increased investments in direct renewal energy since 2001 which covered approximately 52% of the electricity used by major Nike facilities in 2006.
- Consideration of the principles of economic prosperity.

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1. View waste as a business opportunity by creating new markets for what would otherwise be waste material. For example, reprocessing the cushioning foam (mid-sole) of the shoe into the foot bed (insole).

### **3 What actions are they taking to accomplish their goals?**

- Created a baseline against which they can establish targets and begin to measure impacts.
- Set timeline goals, such as by FY2011 all Nike branded footwear will meet certain sustainable, performance, and aesthetic standards and by FY2020 all Nike-branded products will meet those standards.
- Proactively seeking to improve products beyond regulatory compliance.
- Conducting detailed audits of key factory sites to note which processes use the most energy to identify a portfolio of energy efficiency projects that will deliver the greatest terms in both economics and emissions.
- Performed a waste mapping study to look at waste across the entire company.
- Established a Sustainable Products Innovations team and began educating designers.
- Reduced Nike's business operations and travel footprint.

### **4 What are the anticipated benefits and challenges of reaching their goals?**

- Benefits
  1. Nike will develop a reputation as an industry leader in creating sustainable designs and, hopefully, influence other companies/industries to follow their example.
  2. Reduction of waste and packaging will streamline the efficiency of the production processes.
  3. Reduction of toxic materials used in Nike's products not only benefits the environment but also the employees at Nike that work with the materials.
  4. Creation of new markets allows opportunities for growth and economic expansion.
- Challenges
  1. Goals to eliminate toxins and achieve zero waste are ideal and will be difficult to attain.
  2. Goals to recycle are actually goals to down-cycle, which are not truly sustainable goals.
  3. Creating products with high levels of performance and aesthetics will be difficult to maintain as the goals of the company are continually revised to improve their environmental standing.

## **Chinese Egg Case Study (Appendix C)**

### **1 What are the Sustainability goals of the company?**

The goal is Eco Effectiveness, designing a system that is safe, profitable, and regenerative, producing economic, ecological, and social value (the triad) for egg production.

### **2 What Sustainability Principles are they using?**

Reuse or recycling of all waste; no polluting or emitting of wastes beyond what ecosystems can break down and harmlessly recycle naturally; to a degree, reliance on clean, renewable energy technologies; to a degree, quality of life for all eco-systems; consideration of the principles of economic prosperity.

### **3 What actions are they taking to accomplish their goals?**

Economic: during outbreak of bird flu sold product at full premium price; regained trust in the world food market; produces 480k of high-grade eggs and is 70% of the egg market in Beijing. Company will operate additional egg farms in the future. Company will benefit from revenues realized via Certified Emissions Reduction and revenue from selling of excess electricity produced at Biogas plant. Company's resource need is lowered by using electricity produced at Biogas plant. Attention to worker health issues (health care, providing equipment to protect against dust and ammonia fumes) means less sick days, lowering the negative impact on work flows and production strategies.

Ecological: agricultural waste in China is produced in greater volume than municipal and industrial wastes combined, company composts the manure into fertilizer which it sells to local farmers, this allows the farmers to grow corn, which the company guarantees to purchase, at above-market prices, to feed the chickens; instituted high animal husbandry practices (adequate cage size and site, providing the chickens high quality feed, which lowers the incident of disease and the need to use antibiotics, which shows up in the product). Instituted high environmental practices: company practices waste management, energy conservation, and resource recovery (rainwater collection for landscape use). Built biogas plant to deal with the volume of chicken fertilizer it cannot sell, which is converted to methane to make electricity instead of releasing the waste into the environment.

Social: conducted surveys and found that consumers were hungry for a product they could trust (food and safety health issues: SARS, bird flu, Sudan 1 carcinogen; during outbreaks, sales for this company increased while their competitors' businesses suffered), performed household surveys and provided 500k free eggs to gain consumer trust. Branding: product has distinctive packaging, which provides consumers easy identification, and date stamps them for when they were born (trust). Also sells the eggs in manner that the consumer is accustomed to: by count and by weight (familiarity). Mitigates some worry about bird flu and other related diseases in general by allowing villages to buy eggs at well-below market prices, which means the villages do not have to produce the eggs themselves using unsafe practices.

Attention to worker health issues (health care, providing equipment to protect against dust and ammonia fumes) raises employee moral and potentially puts pressure on other companies to follow. Company will produce liquid and powdered eggs that have a longer shelf life and as such can help deal with periods of high and low demand (less marketplace stress). Regaining trust in the world market for their product eases tensions in commodity trade circles, which potentially can ease tensions between countries in general.

### **4 What are the anticipated benefits and challenges of reaching their goals?**

Benefits: decrease in pollution from processes (waste stream, water, and air emissions); creating a branded product that consumers can trust (quality, taste, product from disease-free animals); increase in profits.

Challenges: start-up financing (chicken cages from Italy; fertilizing equipment from Germany; Biogas plant from America), buy-in (from employees and consumers); as the company rapidly expands, finding enough qualified people to hire (historically eggs were from small family farms, problematic to find trained poultry managers). There was difficulty gaining access to capital,

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and foreign investment (buy-in for both money and expertise regarding equipment to make processes sustainable, like the Biogas project). There were also administration challenges, but the company is serious about improving processes that verify their financial performance, and it has taken steps to produce financial documents, and to increase their leadership with their principal stakeholders (stakeholder and board meetings, adding an independent board member).

## **Pepsi Case Study (Appendix D)**

### **1 What are the Sustainability goals of the company?**

The goal is to incorporate sustainability aspects in projects right from the start and track sustainability-related capital spent across PepsiCo. Specific sustainability goals include:

- Reducing water usage through conservation, reuse, and replenishment.
- Reducing greenhouse gas emissions through energy conservation and use of clean energy sources.
- Reducing, recycling, and reusing packaging and solid waste.

### **2 What Sustainability Principles are they using?**

- Minimal consumption of natural resources
- Reuse or recycling of waste
- Reliance on clean, renewable energy technologies
- Quality of life for all ecosystems (to some degree)
- Consideration of the principles of economic prosperity

### **3 What actions are they taking to accomplish their goals?**

Generally speaking, PepsiCo's actions are:

- Apply sound environmental management practices where existing legal requirements are insufficient for operations.
- Consider potential environmental impacts in daily business decision-making processes.
- Encourage conservation of natural resources, recycling, source reduction, and pollution control to ensure cleaner air and water and to reduce landfill wastes.
- Share environmental best practices across the company.
- Monitor emerging issues and keep abreast of regulatory changes, technological innovations, and stakeholder interests.

Each one of their facilities is taking various steps to accomplish their sustainability goals. The facilities are held accountable through a performance audit that will report on their achievement of the sustainable goals. Examples of the actions taken include:

- The Tropicana plant - Captures and re-circulates approximately 550k gallons of water a day from feed mill evaporators to reuse in washing and cleanup operations. Another 150k gallons a day of city reclaimed water is used for irrigation and special utility services.
- Gatorade (the report did not specify which Gatorade facility) installed state-of-the-art, high speed air-only rinsing lines. U.S. Gatorade lines are now utilizing air-only rinsing, achieving a 20% reduction in water consumption where installed. This allows PepsiCo to conserve more than 175 million gallons of water annually.
- Gatorade Florida - Installed the first membrane bio reactor in 1998. Currently 85-90% of the processed wastewater from the plant feeds into a municipal "grey water" line and is used for local irrigation and municipal power plants for turbine cooling. They are now taking this to the next level to treat and re-use the water for such things as cooling towers.



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- PepsiCo China - Partnered with CWDF to continue their mission of making water available to the most water-scarce regions of China. The CWDF has touched approximately 1,000,000 people over the last five years, through their 90,000 cellars and 1,200 wells constructed.
- All facilities – Are focusing on energy efficiency by increasingly putting in place measures to reduce the amount of energy used to produce products. These measures include installation of Energy Star rated equipment, energy efficient motors and energy efficient windows and skylights to enhance natural lighting.
- All Pepsi in North America – All vending machines, fountain equipment, and cooler display units have been converted to non-chlorofluorocarbon (CFC) refrigerants. More than 99% of all new purchases of refrigerated point-of-sale equipment use hydrofluorocarbon (HFC) free insulation.
- Recycled material in packaging —Beverage cans are made from 40% to 50% recycled aluminum. In 2002, they committed to using 10% recycled material in PET soft drink bottles by 2005.
- PepsiCo innovation teams are working to develop and discover creative packaging solutions, which include the investigation of cutting edge technologies that promote environmentally-friendly packaging (renewable resources).

## **4 What are the anticipated benefits and challenges of reaching their goals?**

*Anticipated benefits include:*

PepsiCo case study discussed actual benefits seen thus far, which include:

- Reduction in the consumption of water, fuel and electricity.
- Establish partnerships with various stakeholders worldwide.
- Reduced carbon and nitrogen emissions and generates fuel savings of between 15 and 22% (depending on geographic conditions and fuel costs) by converting 6,000 of 13,000 distribution vehicles to burn liquid propane gas –Mexico Operations.
- Additional benefits listed in actions taken above.

*Anticipated challenges include:*

- Overall finding solutions to their environmental challenges.
- Education and creating awareness of all stakeholders.
- Establish metrics to monitor environmental performance, and use these to set goals for continuous improvement.

### ***Ideas for Sustainability***

During the sustainability workshops, the final 45 minutes were spent brainstorming to identify what each branch could do to improve their sustainability efforts as related to their areas of responsibilities.

Branch	Sustainability Ideas
Market Research Branch	Networking—Inter-Division communication/decision making process subcommittee to identify gaps
	Research—Grantee metrics-focus on one material per cycle; easier to measure; develop quality metrics based on agency requirements in order to close the loop on recycling one material at a time
	Communication—Individual printers for staff to reduce wasted time; use email instead of letters to participants; use teleconference or WebX instead of travel
	Travel—Purchase alternative fuel vehicles for staff use; buy local products; localized equipment storage, closer to field offices; increase commuting incentive; encourage telecommute (where appropriate)
	Educate—Teach participants about sustainability, not just recycling
	Grants—focus on sustainable packaging, bottle to bottle, investment in technology; incentives to go “green” (electric forklifts)
	Producer responsibility—legislation to put more responsibility on producers; enforce processing fees
Audits Branch	Continue with the Working Away From Office (WAFO) policy
	Purchase a hybrid fleet for staff use; replace old vehicles with alternative energy vehicles
	Develop policy for electronic work papers, electronic information (electronic everything), use excel for footing instead of manual calculation
	Conduct desk audits, group audits, and simultaneous audits
	Operate satellite field offices or relocate to make more centrally located
	Buy more recycled content materials

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	Make field offices more “green”—sensor lights, energy efficient refrigerators, low-flow toilets, waterless urinals, waterless hand sanitizer
PANDA/DORA	Communication—email regulatory proposals, Webinars, teleconference, paperless reporting, paperless purchasing, electronic approval process
	Purchasing—automate purchasing, buy more recycled content, lead by example; reuse own materials (binders, books, office supplies), buy certified green products, pay invoices on-time to reduce duplicative invoices
	Expand scope of recycling program
	Educate participants about the principles of sustainability, especially in transportation
	Purchase CO2 offsets/credits to take out of circulation
	Track the Division’s “footprint”
	Expand grant/funding programs
	Electronic reports from IKON, volume reports
	Reduce the amount of travel
	Electronic grant submission
Statewide Training and Resources Branch	WAFO, alternative work schedules, use more mass transit, carpooling
	Implement a water club
	Provide bins for recycling of all recyclable material generated in the office
	Encourage self-education
	Waterless hand sanitizer, blow dryer for bathroom
	Support legislation to phase out plastic containers
	Enforce processing fees, stop subsidized processing fees
	Increase minimum content, make law enforceable

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Certification Services Branch	Incorporate Principles of Sustainability into all training programs
	Develop legislation to encourage industry to use sustainable containers
	Electronic certification applications
	Subsidize parking for staff that carpool
	Develop a sustainability “scorecard” for legislative analysis; only support legislation that has a high score
	Rent hybrid vehicles
	Electronic notices to participants, electronic reports from IKON
	Establish an in-building recycling program for all non-CRV containers
	Identify position’s for WAFO, alternative work schedule, and telecommute
Industry Services Branch	Expand program to include wine and liquor, material specific instead of beverage specific; stop dealer visits to large operators—exempt from site visits (i.e. WalMart, Safeway, etc.)
	Stop dealer visits to large operators—exempt from site visits (i.e. WalMart, Safeway, etc.) stop GPS of all recyclers and retailers—use available resources, (i.e. google earth)
	Decrease political influence; reduce CZ, HF, QIP—give more money to public
	Increase outreach to other Departments/Agency; decrease political influence; reduce CZ, HF, QIP—give more money to public
	Stop GPS of all recyclers and retailers—use available resources, (i.e. google earth) identify position’s for WAFO, alternative work schedule, and telecommute
	Enforce processing fee intent; make dealer sign from recycled material
	Decrease hardcopy documents, scan supporting documents; enforce processing fee intent
Investigations	Video conference, Webinars, teleconference; Decrease hardcopy documents, scan supporting documents
	Electronic reports, digital photos, electronic evidence, decrease paperwork; Video conference, webinars, teleconference

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Branch	Use affidavit instead of travel; electronic reports, digital photos, electronic evidence, decrease paperwork
	Use EFT. Use affidavit instead of travelling
	Electronic notices to participants

## Conclusion

*The Sustainability Education Project had a successful outcome. Ninety-nine percent of Division staff demonstrated an understanding of the principles of sustainability and earned their sustainability certificate. In addition to demonstrating an understanding, staff brainstormed a list of various strategies that the Division could implement to increase our contribution to sustainability and make the Division of Recycling the leader in sustainability and sustainable policies and procedures.*

*The successful outcome of this project reflects the Division of Recycling's leadership in sustainability education. This presents an opportunity to leverage our unique knowledge and skills to improve the sustainability of our program, our participants, and the citizens of California.*

*The sustainability education team makes the following recommendations to Division management:*

- 1 Take advantage of the momentum generated by this project.*
- 2 Develop additional WIG's centered around the principles of sustainability.*
- 3 Form a team to follow up on the list of ideas developed by staff.*
- 4 Implement the most effective ideas.*
- 5 Make the sustainability education program available to other divisions within DOC and other departments within the Resources Agency*

*By following through on these recommendations, management will reflect its commitment to the principles of sustainability and provide staff with the knowledge that this education project made a contribution to their jobs and personal life.*

## ***Appendix***

***Appendix A***      ***[Fetzer Vineyards: Do What Comes Naturally](#)***

***Appendix B***      ***[Nike: Considered Design and the Environment](#)***

***Appendix C***      ***[Chinese Egg Case Study](#)***

***Appendix D***      ***[PepsiCo: Performance with Purpose](#)***